IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
LUFKIN DIVISION

METTLER-TOLEDO, INC,	§	
	§	
Plaintiff,	§	
	§	Civil Action No. 9:06-CV-97
v.	§	
	§	
FAIRBANKS SCALES INC. and B-TEK SCALES, LLC,	§	JUDGE RON CLARK/ JUDGE KEITH GIBLIN
Defendants.	§	

MEMORANDUM OPINION AND ORDER CONSTRUING CLAIM TERMS OF UNITED STATES PATENT NOS. 4,804,052, 4,815,547, AND 4,955,441.

In accordance with 28 U.S.C. § 636(b)(1), Federal Rule of Civil Procedure 72, and the Local Rules for the United States District Court for the Eastern District of Texas, the District Court referred the above-captioned civil action to the undersigned United States Magistrate Judge for all pre-trial proceedings, including a determination of non-dispositive pretrial motions and proceedings and entry of findings of fact and recommended disposition on case-dispositive motions.

Plaintiff Mettler-Toledo, Inc. ("Mettler-Toledo") alleges that Defendant B-Tek Scales, LLC ("B-Tek") infringes U.S. Patent Nos. 4,804,052 (the ` 052 patent), 4,815,547 (the ` 547 patent), and 4,955,441 (the ` 441 patent).[1] The Court conducted a *Markman* hearing to assist the court in interpreting the meaning of the claim terms in dispute. Having carefully considered the patents, the prosecution history, the parties' briefs, and the arguments of counsel, the Court now makes the following findings and construes the disputed claim terms.[2]

[1]Defendant Fairbanks, Inc. was previously dismissed from this case. *See* Doc. # 67.

[2]While this Order governs in the event of any conflict between the Order and the Court's preliminary analysis at the hearing, the record may clarify the bases for the conclusions set out herein.

I. Claim Construction Standard of Review

Claim construction is a matter of law. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 116 S. Ct. 1384 (1996) ("*Markman II*"). "The duty of the trial judge is to determine the meaning of the claims at issue, and to instruct the jury accordingly." *Exxon Chem. Patents, Inc. v. Lubrizoil Corp.*, 64 F.3d 1553, 1555 (Fed. Cir. 1995) (citations omitted).

"'[T]he claims of the patent define the invention to which the patentee is entitled the right to exclude.'" *Phillips v. AWH Corp.,* 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*) (citation omitted). "Because the patentee is required to 'define precisely what his invention is,' it is 'unjust to the public, as well as an evasion of the law, to construe it in a manner different from the plain import of its terms.'" *Phillips*, 415 F.3d at 1312 (quoting *White v. Dunbar*, 119 U.S. 47, 52 (1886)).

The words of a claim are generally given their ordinary and customary meaning. *Phillips* 415 F.3d at 1312. The "ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention."[3] *Id.* at 1313. Analyzing "how a person of ordinary skill in the art understands a claim term" is the starting point of a proper claim construction. *Id.*

A "person of ordinary skill in the art is deemed to read the claim term not only in context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Phillips*, 415 F.3d at 1313. Where a claim term has a particular

[3] Based on the patents at issue, the technology involved, and the parties agreement, the Court defines one of ordinary skill in the art to be "a person that has at least a Bachelor of Science degree in mechanical engineering (or in a related engineering discipline) coupled with at least 1 to 2 years experience in the design of load cells for large scale weighing systems; or a person lacking such a degree but having at least 5 years experience in the design of load cells for large scale weighing systems."

meaning in the field of art, the Court must examine those sources available to the public to show what a person skilled in the art would have understood disputed claim language to mean. *Id.* at 1414. Those sources "include 'words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.'" *Id.* (citation omitted).

"[T]he ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Phillips*, 415 F.3d at 1314. In these instances, a general purpose dictionary may be helpful. *Id.*

However, the Court emphasized the importance of the specification. "[T]he specification 'is always highly relevant to the claim construction analysis. Usually it is dispositive; it is the single best guide to the meaning of a disputed term.'" *Phillips*, 415 F.3d at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). A court is authorized to review extrinsic evidence, such as dictionaries, inventor testimony, and learned treaties. *Phillips*, 415 F.3d at 1317. But their use should be limited to edification purposes. *Id.* at 1319.

The intrinsic evidence, that is, the patent specification, and, if in evidence, the prosecution history, may clarify whether the patentee clearly intended a meaning different from the ordinary meaning, or clearly disavowed the ordinary meaning in favor of some special meaning. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979-80 (Fed. Cir. 1995). Claim terms take on their ordinary and accustomed meanings unless the patentee demonstrated "clear intent" to deviate from the ordinary and accustomed meaning of a claim term by redefining the term in the patent specification. *Johnson Worldwide Assoc., Inc. v. Zebco Corp.*, 175 F.3d 985, 990 (Fed. Cir. 1999).

The "'ordinary meaning' of a claim term is its meaning to the ordinary artisan after reading the entire patent." *Phillips*, 415 F.3d at 1321. However, the patentee may deviate from the plain and ordinary meaning by characterizing the invention in the prosecution history using words or expressions of manifest exclusion or restriction, representing a "clear disavowal" of claim scope. *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1327 (Fed. Cir. 2002). It is clear that if the patentee clearly intended to be its own lexicographer, the "inventor's lexicography governs." *Phillips*, 415 F.3d at 1316.

II. Construction of Means Plus Function Terms

Determining the claimed function and the corresponding structure of means-plus-function clauses are matters of claim construction. *WMS Gaming Inc., v. Int'l Game Tech.*, 184 F.3d 1339, 1347 (Fed. Cir. 1999). Claim construction of a means-plus-function limitation involves two steps. *See Medical Instrumentation and Diagnostics v. Elekta*, 344 F.3d 1205, 1210 (Fed. Cir. 2003). The court must first identify the particular claimed function, and then look to the specification and identify the corresponding structure for that function. *Id*.

When determining the function, this Court may not improperly narrow or limit the function beyond the scope of the claim language. *Micro Chem. Inc. v. Great Plains Chem. Co.,* 194 F.3d 1250, 1258 (Fed. Cir. 1999). Conversely, this Court cannot broaden the claim language by ignoring the clear limitations contained in the claim language. *Lockheed Martin v. Space Systems/Loral, Inc.,* 249 F.3d 1314, 1324 (Fed. Cir. 2001).

When determining the corresponding structure, this Court must identify the corresponding structure in the written description that performs the particular function. *Asyst Technologies, Inc. v. Empak, Inc.,* 268 F.3d 1364, 1369 (Fed. Cir. 2001). A structure disclosed in the specifications is

only deemed to be corresponding structure if the specification clearly links or associates that structure to the function recited in the claim. *Kahn v. General Motors Corp.,* 135 F.3d 1472, 1476 (Fed. Cir. 1998). A dispute commonly arises as to the scope of the structure to be included as corresponding structure. The corresponding structure need not include all things necessary to enable the claimed invention to work, however, it must include all structure that actually performs the recited function. *Default Proof Credit Card System, Inc. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1298 (Fed. Cir. 2005). Structural features that do not actually perform the recited function do not constitute corresponding structure and thus do not serve as claim limitations. *Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc.,* 145 F.3d 1303, 1308-09 (Fed. Cir. 1998). In other words, the corresponding structure must actually perform the function and not merely enable the structure to perform as intended. *Asyst Technologies, Inc.,* 268 F.3d at 1371. Disclosed structure includes that which is described in a patent specification, including any alternate structure identified. *Ishida Co., LTD. v. Taylor,* 221 F.3d 1310 (Fed. Cir. 2000).

III. Claim Construction of ` 052 Patent

The ` 052 patent relates to weighing scales made of multiple digital load cells, which are connected together and are also connected to a master controller in a local area network. The purpose of the load cells is to determine the weight of a load on a scale. The digital cells are polled by, and provide weight readings to, the master controller. The weight readings are combined with a load position correction factor for each load cell and summed to provide a weight indication corrected for load position. The values of the load position correction factor are determined during set up for the scale and an individual load cell can be diagnosed remotely and replaced if defective. All of the disputed terms are contained in Claims 1 and 4-7.

Claim 1 with the disputed terms in bold and agreed terms in italics, states:

> Weighing apparatus comprising a plurality of load cells, **load receiving means supported by said load cells**, **means associated with said load cells for providing a digital representation of a load on each load cell**, **means for storing a mathematical expression** for *load corrected for load position*, and **means for applying said mathematical expression to said digital load representations to produce a digital representation of the total load on said load receiving means corrected for load position**.

1. "<u>load receiving means supported by said load cells</u>" (claim 1)

Where a claim includes the word "means," a presumption is invoked that 35 U.S.C. § 112 ¶ 6 applies. *See Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1248 (Fed. Cir. 2005). The parties agree that this phrase is a means-plus-function term. The parties also agree, and the Court finds, that the function is "to provide a structure for receiving a load to be weighed." The dispute is over the corresponding structure.

Mettler-Toledo proposes that the corresponding structure is "a platform". B-Tek suggests "at least one or more scales or platforms." B-Tek's argument that a scale is also a load receiving means is based upon the fact that, in the Summary of the Invention, the specification states that "multiple load cells associated so as to form one or more scales are connected to one or more analog-to-digital converters to obtain a digital representation of the load on each cell." ` 052 patent, col. 2, ll. 21-24. At the hearing, B-Tek suggested that in ordinary usage the term "scale" and "platform" are synonymous.

In the patent, a scale is described as a system comprising of a platform and multiple digital load cells, but the specification makes no reference to scales as a separate structure for receiving a load. *See, e.g.,* ` 052 patent, col. 5, ll. 30-33 ("Referring to Figs. 5 and 6, there is shown a system . . configured as a single scale for weighing vehicles."). There is nothing in the patent which equates

a platform with a scale.

The specification clearly states that the platform portion of the scale is a structure for receiving a load. The '052 patent teaches that the load cells can be arranged to constitute an individual scale (such as a scale used to weigh a truck) or arranged to constitute multiple scales to weigh particular tanks or storage bins. '052 patent, col. 4, ll. 1-15. With regard to the single scale, such as one to weigh trucks, the patent states that the load cells are positioned beneath "the platform of a vehicle scale or other scale utilizing a platform for weighing." '053 patent, col. 4, ll. 11-15. The master controlled polls the load cells to receive the weight of the object on the platform. '052 patent, col. 4, ll. 16-18.

Later in the specifications, the '052 patent again references the single truck scale embodiment. The patent discloses that the "system includes eight digital load cells **20** as described above supporting a platform **125** suitable for holding a vehicle such as a truck." ` 052 patent, col. 5, ll. 33-35; *see also* Fig. 5; *see* ` 052 patent, col. 6, ll. 28-42. Again, referencing Figures 5 and 6 which depict the vehicle scale, the specifications discuss the weight being placed on the platform. '052 patent, col. 6, ll. 28-43.

In its reply brief, Mettler-Toledo stated that its definition of "a platform" was not meant to be limited to a single platform. This position is seemingly supported by the specification in that one embodiment of the invention encompasses several scales, which may, of course, involve the use of several platforms. *See* ` 052 patent, Fig. 1; col. 4. ll. 1-8. However, the specification is silent as to whether the embodiment involving multiple bins or tanks have the bins or tanks sitting on platforms or whether the load cells are somehow attached to the bins or tanks. The specifications do not limit the invention to one platform, nor does it specifically disclose multiple platforms.

Therefore, the Court concludes that the corresponding structure is "a platform, and equivalents thereof."

2. "<u>means associated with said load cells for providing a digital representation of a load on each load cell</u>" (claim 1)

The parties agree, and the Court finds, that this is a means-plus-function term. The parties initially proposed that the function is: "to convert the analog output of each load cell into a digital signal corresponding to a load experienced by that load cell." At the hearing, Mettler-Toledo suggested that the section "corresponding to a load experienced by that load cell" may be omitted from the function.

For the corresponding structure, Mettler-Toledo proposes "an analog-to-digital converter". B-Tek proposes: "a nickel resistor **59**, preamplifier **75**, analog filter **65**, analog switch **68**, power supply **77**, multi-slope analog-to-digital converter **70** and associated microprocessor **80** (an Intel 8344)." As an alternative, B-Tek argues: "multiple load cells can each contain nickel resistor **59**, preamplifier **75**, analog filter **65**, power supply **77**, and share the combined elements of a analog switch **68**, multi-slope analog-to-digital convertor **70**, and microprocessor **80** (an Intel 8344) which multiplexes the analog signal to the load cells via the analog switch." This is almost every element in Figure 4. *See* `052 patent, col. 4, ll. 49-68. B-Tek argues that the phrase, "corresponding to a load experience by that cell," is what necessitates the disclosure of all of these additional elements.

The claim language by itself is clear. There are two parts: (1) "associated with said load cells;" and (2) "for providing a digital representation of a load on each load cell." The first phrase is a descriptive modifier – it tells the reader that the structure must be associated with said load cells.

The second portion describes what the structure must do. It must provide a digital representation of a load on each load cell. Based on the claim language, the Court concludes that the function is: "to provide a digital representation of the load on each load cell."

With regard to the corresponding structure, the analog-to-digital ("A/D") converter is consistently described as converting the analog output into the digital signal. The patent teaches that the electrical signal is in analog form until it is converted to a digital signal by the analog- to- digital converter. In the Summary of the Invention, the specifications disclose that multiple load cells associated so as to form one or more scales are connected to "one or more analog-to-digital (A/D) converters to obtain a digital representation of the load on each load cell." '052 patent, col. 2, ll. 20-24.

In describing the best mode for carrying out the invention, the specifications refer to Figure 4 and the inventor notes that the output of the analog switch is connected to the input of a "multiple slope analog-to-digital converter **70**". '052 patent, col. 4, ll. 53-55. The specification states: "microprocessor **80** controls the operation of analog switch **68** to cause analog weight signals from bridge **60** and temperature indicating signals from nickel resistor **59** to be converted to digital form by A/D convertor **70** and transmitted to microprocessor **80**." '052, col. 4, ll. 63-68; *see also* Fig. 4.

The analog-to-digital convertor, or the multiple slope analog-to-digital converter, performs the function of converting the analog output of each load cell into a digital signal. B-Tek argued at the hearing that an A/D convertor by itself does not do anything. The function is "to provide a digital representation of the load on each load cell." The question is what structure provides the digital representation. In this instance, as noted, it is the A/D convertor. The other structures merely allow the system to operate as intended and do not perform the recited function. It also appears that

the specifications clearly link the analog-to-digital converter and the multiple slope analog-to-digital converter to the performance of the function. Therefore, based on the specification and the claim language, the corresponding structure is: "an analog-to-digital convertor, or a multiple slope analog-to-digital converter, and equivalents thereof."

3. "<u>means for storing a mathematical expression for load corrected for load position</u>" (claim 1)

The parties agree that this term is governed by 35 U.S.C. § 112 ¶ 6. The disputed limitation is "means for storing a mathematical expression for load corrected for load position". The mathematical expression for load corrected for load position is set forth as equation (1) in the specifications. *See* '052, col 6, ll. 44- 55.

Mettler-Toledo argues that the function is simply "to provide a storage medium for storing a mathematical equation." B-Tek argues that the correct function is "to maintain for future use in a particular location a mathematical expression for correcting for load position the digitized outputs of load cells used in a scale and adding the corrected digitized outputs so that the sum remains the same for a given load no matter where on the scale it is positioned."

Mettler-Toledo contends that B-Tek's proposed function is limiting. This Court, in identifying the function of a means-plus-function claim, must not improperly narrow or limit the function beyond the scope of the claim language itself. *See Micro Chem, Inc.,* 194 F.3d at 1258. However, Mettler - Toledo's proposed function does not capture the function of the limitation. The function is to not merely to store any mathematical expression, but to store a particular mathematical expression for load corrected for load position. The parties agree that "load corrected for load position" means "digital weight readings adjusted such that the sum of the digital weight readings remains substantially the same for different positions of the same weight on the platform." Further,

this is consistent with the specification, which describes a mathematical expression that is used for correcting load position errors. *See* ` 052, col. 6, ll. 29-30; *see also* ` 052 patent, col. 6, ll. 38-42 ("these digital signals are modified so that the sum of the modified signals representing the weight on platform **125** remains substantially the same for different positions of the same weight on the platform.").

Based on the parties agreed terms and the claim language, this Court concludes that the function is: "to store a mathematical expression that is used for adjusting digital weight readings such that the sum of the digital weight readings remains substantially the same for different positions of the same weight on the platform."

This Court must next determine the structure which stores this mathematical expression. With regards to the corresponding structure, Mettler-Toledo proposes "data storage memory". At the hearing, Mettler-Toledo conceded that its proposed structure may be too general and suggested that the structure should specifically include ROM, EEPROM, and RAM memory. B-Tek suggests "non-volatile programmable memory **183**, such as an EEPROM electronic memory devices, embedded in a master controller **130**." B-Tek argues that only non-volatile memory should be included as structure because the expression would be lost if power to the scale system is interrupted. As discussed at the hearing, the parties both agreed that the dispute is over whether memory can only be non-volatile, or if volatile memory should also be included as part of the structure.

The specifications teach that during the set-up procedure the mathematical constants of the equation (1) must be determined. '052 patent, col. 8, ll. 22 - 24. The constants are determined by placing a test weight at various positions on the scale and using generally known methods for solving simultaneous equations. '052 patent, col. 6, ll. 66 - col. 8, l. 43. The specifications disclose that

"the constants are stored in memory at the master controller along with equation (1) for use in correcting the weight readings for load position during operation." ` 052 patent, col. 8, ll. 36-39 (emphasis added).

However, the inventor did not disclose what particular memory (RAM, ROM, EEPROM, etc.) is utilized to store the expression. The specifications disclose that the master controller includes "a microprocessor **140**, preferably an Intel 8344, provided with internal RAM memory **140a** . . . ." ` 052 patent, col. 5, 45-48. Microprocessor **140** communicates with an address/data bus **150** to which is connected a program memory **152** (identified in Fig. 7 as EEPROM), RAM **153**, real time clock **154** and a pair of dual transmitters **156**, **157**. '052 patent, col. 5, ll. 51-54. Further, the microprocessor is also described as having non-volatile programmable memory **183** (identified in Fig. 7 as EEPROM) connected "for storage of various calibration constants and similar information determined during calibration and set up of the system." ` 052 patent, col. 5, l. 66 - col. 6, l. 2.

The flow charts of Figs. 10A to 10L illustrate the operation of the master controller. Specifically, Fig. 10K illustrates the operation to adjust the weight readings from the load cells for load position and to sum up the readings to obtain the total weight on the scale. '052 patent, col. 12, ll. 60-64. During the calculation process, "the values of the load correction constants are retrieved from memory at block **503** (EEPROM) and loaded into a register. If the load position constant was successfully fetched from memory as determined at block **505** operation jumps through point **508** to block **510** where the weight reading from load cell N is multiplied by load position constant Xn stored in register M and the result added to the total weight register." '052 patent, col. 13, ll. 4-10.

The specifications and Figure 10K specifically disclose that the load correction constants are retrieved, and therefore stored, in EEPROM. Again, however, the specifications are silent as to whether the expression itself is stored in RAM, ROM, or EEPROM.

A structure disclosed in the specification is only deemed to be the corresponding structure if the specification clearly links or associates that structure to the function recited in the claim. *Kahn*, 135 F.3d at 1476. The specifications state that the equation and constants are stored "in memory at the master controller" during set up. ` 052 patent, col. 8, ll. 36-39. This is the only structure that is clearly linked by the inventor to the function recited in the claim. The specifications do not clearly link any of the specific types of memory (RAM, ROM, EEPROM) to the function.

A question remains as to whether "memory" is generic and whether the inventor should have been more specific in his disclosure.[4] The Federal Circuit has previously held that "memory" was sufficient structure to perform a claimed function so as to rebut the "means" presumption that the element is a means plus function element under § 112, ¶ 6. *See Optimal Recreation Solutions, LLP v. Leading Edge Technologies, Inc.,* 6 Feds. Appx. 873, 878 (Fed. Cir. 2001). The Federal Circuit held that the fact that "memory" would have a reasonably well understood meaning to one skilled in the art and that they fact that the term was broad did not detract from its well understood name for structure. *See also Linear Technology Corporation v. Impala Linear Corporation,* 379 F.3d 1311, 1322 (Fed. Cir. 2004)(holding that the fact that a disputed term is not limited to a single structure does not disqualify it as a corresponding structure, as long as the class of structures is identifiable by a person of ordinary skill in the art).

[4] B-Tek did not contend that the claim was invalid for indefiniteness.

The Court concludes that the corresponding structure is: "memory embedded in a master controller, and equivalent structures."

The parties submitted the following agreed definitions, which the court will adopt [Doc. # 77]:

RAM (Random Access Memory) - a type of memory that can be accessed so that any address location can be written in or read in any sentence. RAM is volatile, meaning that the contents of a RAM memory chip are not retained when power is interrupted.

ROM (Read Only Memory) - a type of memory on which data or information is fixed and cannot be changed. Once data has been written onto a ROM chip, it cannot be removed and can only be read. ROM is non-volatile, meaning that the contents of a ROM memory chip will be retained when power is removed.

EEPROM (Electrically Erasable Programmable Read Only Memory) - a type of ROM memory chip on which data can be recorded and electrically altered, if necessary, without removing the chip from its host circuit. EEPROM is non-volatile, meaning that the contents of an EEPROM chip will be retained even when power is removed.

VOLATILE MEMORY - A type of memory that does not retain its stored information (data) when the power is interrupted.

NON-VOLATILE MEMORY - A type of memory that retains its data when the power is removed.

4. "<u>means for applying said mathematical expression to said digital load representations to produce a digital representation of the total load on said load receiving means corrected for load position</u>" (claim 1)

The parties agree, and the court finds, that this is a means-plus-function term subject to 35 U.S.C. § 112 ¶ 6. Mettler-Toledo proposes that the function is "to provide a mechanism capable of applying a mathematical equation to digital readings indicative of a weight on each load cell in order to output a digital reading indicative of the total weight of a load present on the platform – regardless of the location of the load." B-Tek argues that the function is "to apply the mathematical expression so that the sum of the load position corrected, digitized load cell outputs representing the weight on

the scale remains substantially the same for a given load no matter where on the scale it is positioned."

The Court has already addressed "load receiving means" and, as noted above, the parties agreed on the definition for "corrected for load position." The dispute is over Mettler-Toledo's use of the phrase "a mechanism capable of applying." *See* B-Tek's Resp. Br., p. 7. Mettler-Toledo does not identify any basis for reading this phrase into the claim. Moreover, Mettler-Toledo does not discuss this point in its reply brief.

At the hearing, the Court proposed: "to apply a mathematical expression to digital load readings representing the analog electrical outputs indicative of the weight on each load cell such that the sum of the digital weight readings remains substantially the same for different positions of the same weight on the platform." Mettler-Toledo agreed to this function. B-Tek's objection to this proposal is that it does not also contain the word "corrected." The patent expressly states: "these digital signals are modified so that the sum of the modified signals representing the weight on platform **125** remains substantially the same for different positions of the same weight on the platform." ` 052 patent, col. 6, ll. 38-42. This explains what is meant by "corrected." Because the proposed function tracks the language in the specification, the court declines to add B-Tek's additional limitation. After further review, this court declines to include "representing the analog electrical outputs" as part of the function as this is technically not included in the claim language.

The court determines the function to be "to apply a mathematical expression to digital load readings representing the weight on each load cell such that the sum of the digital weight readings remains substantially the same for different positions of the same weight on the load receiving means."

As for the corresponding structure, B-Tek argues that there is no corresponding structure which is clearly linked to this function. Mettler-Toledo contends that the corresponding structure is a "microprocessor." B-Tek counters that nowhere in the specification is it disclosed that a microprocessor performs the claimed function.

35 U.S.C. § 112 ¶ 2 requires that the claims of a patent particularly point out and distinctly claim the subject matter which the applicant regards as his invention. "In ruling on a claim of patent indefiniteness, a court must determine whether those skilled in the art would understand what is claimed when the claim is read in light of the specification." *Bancorp Servs., LLC v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1371 (Fed. Cir. 2004). "The claims as filed are part of the specification, and may provide or contribute to compliance with Section 112." *Hyatt v. Boone*, 146 F.3d 1348, 1252 (Fed. Cir. 1998). Moreover, as noted, in a means-plus-function term, the "structure disclosed in the specification is corresponding structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." *See Medical Instrumentation and Diagnostics*, 344 F.3d at 1210.

The patent teaches that the master controller polls the load cells to receive the weight data from those cells. The data is then operated on in certain respects, summed with the data from other load cells, and the result further operated on to produce the final displayed weight. '052 patent, col. 6, ll. 7-27. "The essential feature is that the master controller receive and operate on digital information from each of the load cells." '052 patent, col. 6, ll. 25-27. The patent explains in detail the operation of the master controller in calculating the load corrected for load position. *See* '052 patent, col 12, l. 60 - col. 13, l. 36; Fig. 10K. The specification discloses that the master controller includes a microprocessor. '052 patent, col. 5, ll. 45-48.

B-Tek argues that a microprocessor, without a disclosure of the appropriate software, is incapable of doing anything. In other words, B-Tek's argument is that this limitation requires the use of software to apply the mathematical expression, but the microprocessor disclosed in the patent is not described as utilizing any software.

Both parties agree that the function is computer implemented. Since this function is computer implemented, the patent must disclose an algorithm to be performed by the computer to accomplish the recited function. *WMS Gaming Inc. v. International Game Technology*, 184 F.3d 1339, 1349 (Fed. Cir. 1999). This does not mean that the patentee must disclose specific source code for the computer. And the term "algorithm" is not limited to a formula of mathematical symbols. For example, the steps, formula, or procedures to be performed by the computer might be expressed textually, or shown in a flow chart. *See Application of Freeman*, 573 F.2d 1237, 1245-46 (C.C.P.A. 1978) *and cases cited therein*.

However, the specification can provide that algorithms known to those skilled in the art may be utilized. The Court in *Dossel* noted that the specification did not "disclose exactly what mathematical algorithm will be used . . . ." *In re Dossel*, 115 F.3d 942, 946 (Fed. Cir. 1997). However, the Court stated that the specification described a device that receives data from two sources and then "computes, from the received data, the current distribution by mathematical operations including a matrix inversion or pseudo inversion, and then outputs the result to a display." *Id.* at 946. The specification also said "'known algorithms' could be used to solve the standard equations which are known in the art." *In re Dossel*, 115 F.3d at 946.

The '052 patent sets forth the specific expression (equation 1) which is utilized to calculate the total weight on the platform corrected for load position. *See* '052 patent, col. 6, ll. 55-60. The

patent teaches that the values of the load correction constants may be determined by utilization of "many generally known methods for the solution of simultaneous equations" and also sets forth a preferred method known as "Gaussian Elimination Without Interchange", which is a well known method for solving simultaneous equations. *See, e.g.,* ` 052 patent, col. 7, ll. 23-30; Eric W. Weisstein, "Gaussian Elimination" from *MathWorld – A Wolfram Web Resource* available at http://mathworld.wolfram.com. The patent also discloses other potential mathematical techniques for solving for the constants, such as the method of matrices or any other standard method for solving N simultaneous equations in N unknowns." *See* ` 052 patent, col. 7, ll. 64-68. The patent specifically describes, in a flow chart and in text, the procedure for applying the load position correction constant and calculating and summing the weights. *See* ` 052 patent, Fig. 10K; ` 052 patent, col. 12, l. 60 - col. 13, l. 35.

B-Tek bears the burden to prove indefiniteness by clear and convincing evidence. An algorithm is commonly defined as "a process, or set of rules." *See* OXFORD ENGLISH DICTIONARY ONLINE *available at http://dictionary.oed.com*; *see also Application of Freeman*, 573 F.2d at 1245-46. Simply because a specific software program is not identified does not mean that the claim is indefinite. The patent identifies specific mathematical expressions which are used to solve equations, and discloses a flow chart to show the manner in which the expressions are utilized and applied by the master controller. The Court concludes that the term is not indefinite.

The disclosed structure is not the general purpose computer or microprocessor, but rather the special purpose computer microprocessor programmed to perform the disclosed algorithm. *WMS Gaming, Inc.,* 184 F.3d at 1349. Therefore, the corresponding structure is: "a master controller, equipped with a microprocessor programmed to perform equation (1), and equivalents thereof."

5. "analog to digital conversion means" (claim 4)

Claim 4 with the disputed terms in bold, states:

> Weighing apparatus as claimed in claim 1 wherein each load cell includes a counterforce and **an analog to digital conversion means** associated with the counterforce.

The parties propose, and the court agrees, that this is a means-plus-function term. For the function, Mettler-Toledo proposes "to convert an analog output signal of the load cell into a representative digital signal." At the hearing, B-Tek agreed to this proposed function.

For the corresponding structure, Mettler-Toledo proposes "an analog to digital convertor." B-Tek suggests "a nickel resistor **59**, preamplifier **75**, analog filter **65**, analog switch **68**, power supply **77**, multi-slope analog-to-digital converter **70** and associated microprocessor **80** (an Intel 8344)."

The parties make the same arguments discussed above in term number two. As noted above, the A/D convertor performs the recited function, not the additional structure proposed by B-Tek. Based on the specification and the claim language, and for the reasons discussed above, the Court concludes that the corresponding structure is "an analog-to-digital convertor, or a multi-slope analog-to-digital converter, and equivalents thereof."

6. "control means for interrogating said load cells to receive said digital representations" (claim 5)

Claim 5 with the disputed terms in bold, states:

> Weighing apparatus as claimed in claim 1 including **control means for interrogating said load cells to receive digital representations**.

The parties agree, and the Court finds, that this is a means-plus-function term governed by 35 U.S.C. § 112 ¶ 6. Mettler-Toledo states that the function is "to gain digital readings indicative of weight on each load cell." B-Tek suggests "to interrogate the memory devices associated with the individual load cells, receive the load cells' respective digital representations of the analog electrical outputs from those memory devices, and store in memory those digital outputs."

The Court begins by defining "interrogating." The patentee did not specifically define the term "interrogating" in the patent. As the term is commonly used in the field, "interrogation" means "the signal or combination of signals intended to trigger a response." *See* IEEE STANDARD DICTIONARY OF ELECTRICAL AND ELECTRONICS TERMS (6th ed. 1996). This comports with ordinary usage of this term. *See* OXFORD ENGLISH DICTIONARY ONLINE *available at* http://dictionary.oed.com (defining "interrogating" as "of a radio signal: intended to cause a transponder to emit a signal.").

Again, this Court is also mindful that a claimed function may not be improperly narrowed or limited beyond the scope of the claim language. *See Lockheed Martin Corporation v. Space Systems/Loral, Inc.,* 249 F.3d 1314, 1324 (Fed. Cir. 2001). Conversely, neither may the function be improperly broadened by ignoring the clear limitations contained in the claim language. *Id.*

At the hearing, Mettler-Toledo argued that the function should be defined such that the load cells may initiate signals to the master controller. The claim language only contemplates load cells receiving signals.

B-Tek seeks to add the limitation of "store" to the function, contending that the concept of storage is disclosed in claim 1. Independent claim 1 does address storing the mathematical expression, but not the digital weight readings received from the individual load cells. There is no basis in the claim language to add this limitation, and when questioned at the hearing, B-Tek averred

that this was added so that the invention would be able to work. The Court cannot import this additional function without some basis in the claim.

It is clear that the claim function is to interrogate the load cells to prompt the load cells to so that the claim structure can receive "said digital representations". "Said digital representation" is the "digital representation of a load on each load cell". '052 patent, col. 66, ll. 35-38. Based on the claim language, the Court concludes that the function is: "to send a signal, or combination of signals, to the load cells intending to receive a digital representation of the load on each load cell."

Mettler-Toledo proposes that the corresponding structure is "an indicator, terminal or master controller." B-Tek contends that it is a "microprocessor **140** with internal RAM memory **140a**, serial interface **140b**, driver **142**, receiver **143** and multi-wire bus **128**." B-Tek states that there is no basis in the specification for including an "indicator" and a "terminal" in the corresponding structure.

In the Summary of the Invention, the specifications provide that the master controller polls the associated load cells and receives weight data from them. '052 patent, col. 2, ll. 40-41. Later in the specifications, it discloses that the load cells and the master controller can be connected in a local area network (LAN) or the load cells or junction boxes could be connected individually to the master controller. '052 patent, col. 3, ll. 55-60. In the LAN, the master controller acts as the master and the individual load cells act as slaves, incapable of initiating communication with the master controller. '052 patent, col. 3, ll. 61-63. "The essential feature is that the master controller receive and operate on digital information from each of the multiple load cells." '052 patent, col. 6, ll. 25-27.

This Court rejects Mettler - Toledo's proposed structure. Nowhere does the patent discuss the use of a "terminal" or "indicator" in the place of a master controller. While the patentee is not limited to the preferred embodiment, corresponding structure must be specifically identified. The only reference to "an indicator" is a reference in the specification that the master controller depicted in Figure 7 is a "Model 8530 Digital Indicator". '052 patent, col. 6, ll. 3-6.

This Court also rejects B-Tek's proposed structure as too broad. Again, this Court cannot incorporate structure from the written description beyond that necessary to perform the claimed function. Structural features that do not actually perform the recited function do not constitute corresponding structure. The corresponding structure to a function must actually perform the recited function, not merely enable the pertinent structure to operate as intended. In addition, the specification must clearly associate the structure with the performance of the function. *Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc.,* 296 F.3d 1106, 1113 (Fed. Cir. 2002).

As stated above, B-Tek contends that the corresponding structure is a "microprocessor **140** with internal RAM memory **140a**, serial interface **140b**, driver **142**, receiver **143** and multi-wire bus **128**." None of these items, according to the specifications, actually perform the function or are they clearly associated with the function. The specifications provide that it is the master controller which performs the function.

The Court concludes that the corresponding structure is: "a master controller, and equivalents thereof."

7. "<u>means connecting said load cells and said control means in a local area network</u>" (claim 6)

Claim 6 with the disputed terms in bold, states:

Weighing apparatus as claimed in claim 5 including **means connecting said load cells and**

said control means in a local area network.

This is a means-plus-function term governed by 35 U.S.C. § 112 ¶ 6. The parties agree that the function is: "to connect or link the load cells and the control means in a local area network." As discussed above, and at the hearing, the control means is the master controller. The parties have also agreed that "local area network" means "a geographically limited system comprised of various electronic components that are connected or linked together so that they can communicate and/or operate with one another." The question therefore is what is disclosed in the specifications that connects the load cells and the master controller in a local area network (LAN)?

For the corresponding structure, Mettler-Toledo proposes "conductors, cabling and/or bus." B-Tek suggests "four junction boxes, a multi-wire bus with the master controller's microprocessor programmed so that the system functions as a local area network." At the hearing, B-Tek agreed that the structure could be "at least one junction box" instead of "four junction boxes." One relevant question is whether the '052 patent discloses hard wiring the load cells together in a LAN without the use of a junction box.

The '052 patent teaches that preferably each load cell is a digital load cell which includes a dedicated A/D converter and microcomputer and is connected in a local area network with the other load cells and the master controller. '052 patent, col. 2, ll. 32-35.

In Fig. 1, and in the corresponding specifications, the '052 patent discloses that groups of digital load cells **20** are connected to junction boxes **22, 23, 24, 25** by a multi-wire bus **30**. "The bus also connects the junction boxes together and to a master controller **34**." '052 patent, col. 3, ll. 34-39. The patent discloses that the junction boxes serve as wire termination points and one may be assigned to any number of load cells that is convenient in a particular application. '052, col. 3, ll.

42-45. In the next paragraph, the '052 patent discloses that "the connection of the digital load cells **20** to each other and to the master controller **34** through bus **30** provide the basis for a LAN." '052 patent, col. 3, ll. 53-57. "Alternately, each digital load cell **20** or the junction boxes **22-25** could be connected individually to the master controller **34**. The LAN, however, is preferred." '052 patent, col. 3, ll. 53-60.

Later in the specifications, the inventor refers to an embodiment in Figs. 5 and 6 which is similar to the general application system of Fig. 1 but is configured as a single scale for weighing vehicles. The specifications provide that "the load cells **20** are connected together through a junction box **127** and through bus **128** to a master controller **130**." ` 052 patent, col. 5, ll. 35-37.

The master controller includes a microprocessor which is connected to a bus "for communication with the digital load cells **20** through driver **142** and receiver **143** connected to serial interface unit **140b**." ` 052 patent, col. 5, ll. 48-51. While the specification contemplates that "each digital load cell **20** or junction boxes **22-25** could be connected individually to master controller **34**," the specification specifically states that "[t]he LAN, however, is preferred." ` 052 patent, col. 3, ll. 57-60.

Mettler -Toledo objects to the inclusion of "at least one junction box"as corresponding structure and argues that the load cells can be hard-wired to each other without the use of a junction box and still constitute a LAN. That may be true, however, the '052 patent does not disclose this. Mettler - Toledo's reliance on the language in col. 3, ll. 53-57 is not persuasive ("[t]he connection of the digital load cells **20** to each other and to the master controller **34** through bus **30** provide the basis for a LAN ..."). That language immediately follows the disclosure of the junction boxes and the patent must be read as a whole. In any event, the inventor did not disclose hard-wiring the load

cells together without the use of junction boxes and considering that to be a LAN. Further, the specifications do not disclose or discuss cabling or conductors as suggested by Mettler-Toledo.

B-Tek argues that a microprocessor should be included and that there must be a multi-wire bus. The court must look at the entire specification in determining the corresponding structure. As noted above, the specification does not mandate that there must be a multi-wire bus to preform the recited function. The specifications refer to a bus **128** ('052 patent, col. 5, ll. 35-36) and also to a multi-wire bus **30** ('052 patent, col. 3, l. 38).

There is also no basis on which to add the microprocessor. The function is "to connect or link the load cells to the master controller in a local area network." The microprocessor is always described as part of the master controller. The connection is external – from the master controller to the load cells. The microprocessor which is part of the master controller does not link the load cells to the master controller in a LAN. The junction box and the bus, or a multi-wire bus, are disclosed as performing this function.

The Court concludes that the structure is: "at least one junction box and a bus or multi-wire bus, and equivalents thereof."

The remaining claim terms in the ` 052 patent appear in method Claim 7. Claim 7 with the disputed terms in bold and agreed terms in italics, states:

> A method for compensating a multiple load cell scale for load position, said scale including means for providing a digital representation of a load on each load cell, the method comprising the steps of **determining a mathematical expression *for load corrected for load position***, storing said mathematical expression, **interrogating each of said load cells to receive said digital load representations**, and **applying said mathematical expression to said digital load representations to produce a digital representation of the total load on the scale corrected for load position**.

8. "<u>determining a mathematical expression for load corrected for load position</u>" (claim 7)

As noted, the parties agreed to the definition for "load corrected for load position." This only

leaves the phrase "determining a mathematical expression." Not every word in a patent is a technical term of art in need of construction. There is no basis in the patent or in the extrinsic evidence to conclude that this phrase might be confusing to jurors, or that it is used in some technical sense recognized by those skilled in the art. The Court, therefore, will not further define this term.

9. "interrogating each of said load cells to receive said digital load representations" (claim 7)

The terms in this phrase are discussed above in term six. For the reasons discussed above, the court defines this phrase as "sending a signal, or combination of signals, to the load cells intending to receive a digital representation of the load on each load cell."

10. "applying said mathematical expression to said digital load representations to produce a digital representation of the total load on the scale corrected for load position" (claim 7)

The terms in this phrase are discussed above in term four. For the reasons discussed above, the court defines this phrase as "applying a mathematical expression to digital load readings representing the weight on each load cell such that the sum of the digital weight readings remains substantially the same for different positions of the same weight on the load receiving means."

V. Claim Construction of ` 547 Patent

The ` 547 patent relates to a modular digital load cell which uses a counterforce to weigh loads. A circuit board is mounted on the counterforce and an enclosure seals the circuit board. The circuit board can include an A/D converter to produce a digital representation of a load. The digital weight readings are then corrected by the circuits within the circuit board without physical penetration of the enclosure.

All of the disputed terms are contained in Claims 1, 9 and 11. Claim 1 states:

> Weighing apparatus comprising a counterforce, **transducer means mounted on said counterforce, circuit means associated with said counterforce, said circuit means being responsive to external control and including means for producing digital representations of loads applied to said counterforce, means for applying at least one**

> **correction factor to said digital representations and means for transmitting said digital representations, means providing a sealed enclosure for said transducer means and said circuit means, and means providing a path through said enclosure means for external communication with said circuit means**.

Claim 9 recites:

> Weighing apparatus comprising a plurality of load cells, each load cell including a counterforce, **transducer means mounted on said counterforce, circuit means associated with said counterforce, said circuit means including means for producing digital representations of loads applied to said counterforce and means responsive to external interrogations for transmitting said digital representations, means providing a sealed enclosure for said transducer means and said circuit means, and means providing a path through said enclosure means for external communication with said circuit means, load receiving means supported by said load cells, means connecting said load cells in a local area network, means for interrogating said load cells to receive said digital representations, and means for combining said digital representations to produce digital representations of the total weight on said load receiving means.**

Claim 11 recites:

> Weighing apparatus as claimed in claim 9 wherein said circuit means includes **means for applying at least one correction factor to said digital representations**.

1. "<u>tranducer means mounted on said counterforce</u>"(claims 1 and 9)

Where a claim includes the word "means," a presumption is invoked that 35 U.S.C. § 112 ¶ 6 applies. *See Harris Corp. v. Ericsson Inc.*, 417 F.3d at 1248. The parties agree that this phrase is a means-plus-function term. The parties also agree, and the Court finds, that the function is: "to sense compressive and tensile strain." The primary dispute is whether the "transducer means" must be defined in terms of the precise orientation a strain gauge is mounted on the counterforce.

Mettler-Toledo contends that the specific orientation should not be included and argues that the corresponding structure for performing the recited function are "strain gauges or similar devices." Conversely, B-Tek urges that the specific orientation of the strain gauges should be included and that corresponding structure is disclosed in ` 547 patent, col. 4, ll. 1-15, which states, "strain gauges

75 and **76**, mounted at diametrically opposite locations on reduced section **52** below and above, respectively, the center line, and their strain sensing elements oriented lengthwise of the rocker pin; and a pair of tension sensitive strain gauges **79** and **80**, mounted in the same diametrically opposite locations as compression gauges **75** and **76**, but on opposite sides of the center line from the compression gauges." B-Tek also points to ` 547 patent, col. 13, ll. 22-29 as an alternative structure, which is, "[f]our strain gages **687**-**690** spaced at 90 degree intervals on the upper surface of torsion ring **684** directly below the compression gages to sense tensile strains in the torsion ring. The strain gages are connected in an electrical bridge circuit."

In the Background of the Invention, the specifications state that columnar structures have previously been provided with strain gauges or "similar transducers" and employed as counterforces in weighing applications. '547 patent, col. 1, ll. 26-29. However, it was determined that unequal tensile and compressive strain produced nonlinear strain characteristics. '547 patent, col. 1, ll. 32-25. The development of digital load cells has permitted digital correction of these inaccuracies. '547 patent, col. 1, ll. 46-48. "Transducer means" are mounted on the periphery of the column for producing signals representing loads applied to the end surfaces. '547 patent, col. 1, ll. 64-66.

The specifications later refer to Fig. 4 and note that a set of strain gauges and a temperature sensing resistor are arranged as shown in Fig. 4 on the periphery of reduced section **52.** '547 patent, col. 3, l. 66 - col. 4, l. 1. The specification goes further and provides that "a pair of compression sensing strain gauges **75, 76** are mounted at diametrically opposite locations on reduced section **52** below and above, respectively, center line **50** with their strain sensing elements oriented lengthwise of the rocker pin to sense compressive strain produced by loads applied to loading surfaces **60, 65**. A pair of tension sensitive strain gauges **79, 80** are mounted at the same diametrically opposite

locations as compression gauges **75, 76** but on opposite sides of center line **50** from the compression gauges. The strain sensing elements of gauges **79** and **80** are generally aligned with the transverse center line **50** to sense tensile strains manifested by an increase in the circumference of reduced section **52** when loading surfaces **60, 65** are loaded in compression." '547 patent, col. 4, ll. 1-15.

In use, compression strains are sensed by strain gauges **75** and **76.** The tensile strains are sensed by gauges **79** and **80.** '547 patent, col. 4, ll. 51-56. Figures 13 - 15 and Figures 16 and 17 illustrate additional examples of modular digital load cells embodying the invention. In Figures 13 - 15, a pair of strain gauges **610**, **611** are mounted on the upper beam aligned along its center line "in the conventional manner". Another pair of strain gauges **617**, **618** are mounted in the same fashion on the lower beam. '547 patent, col. 12, ll. 34-46.

Figures 16 and 17 depict a torsion ring load cell. In that embodiment four strain gauges are spaced at 90 degree intervals on the upper surface of the torsion ring with their strain sensing elements oriented circumferentially to sense compressive strains produced in the ring. Four other strain gauges are mounted on the lower surface of the torsion ring directly below the compression gauges to sense tensile strains in the torsion ring. *See* '457 patent, col. 13, ll. 22-30.

This Court declines to import the orientation of the strain gauges into the corresponding structure which is set forth in the preferred embodiments. *See Kudlacek v. DBC, Inc.,* 25 Fed. Appx. 837, 844 (Fed. Cir. 2001)(holding that the position and orientation of a set screw and pad assembly was not properly viewed as part of the corresponding structure). The Court determines the corresponding structure to be "strain gauges, and equivalents thereof."

2. "circuit means associated with said counterforce, said circuit means being responsive to external control, and including means for producing digital representations of loads applied to said counterforce" (claim 1)

"circuit means associated with said counterforce, said circuit means including means for producing digital representations of loads applied to said counterforce and means responsive to external interrogations for transmitting said digital representations" (claim 9)

As an initial matter, the parties agree, and the Court so determines, that both limitations fall within § 112, ¶ 6. Mettler-Toledo argues that the recited function is "to produce digital representations of loads applied to the counterforce and to respond to remote signals." B-Tek contends that the function is: "to sense compressive strain and tensile strain, to respond to external control, and to produce digital representations of load applied to the counterforce." The parties' proposals are similar except for a dispute over whether the function includes sensing compressive and tensile strain.

The language of the claim itself says nothing about sensing tensile or compression strain and to import this into the function would require the Court to improperly go beyond the language of the claim itself. The claim limitation requires that the circuit means be responsive to external control and produce digital representations of loads applied to the counterforce. Therefore, this Court determines the corresponding function is "to respond to external control and to produce digital representations of loads applied to the counterforce".

As for the corresponding structure, Mettler-Toledo argues that the corresponding structures for purposes of ¶ 112(6) are "a circuit board and similar electronic circuitry". B-Tek argues that the corresponding structure is "at least: (1) strain gauges **75** and **76**, **79**, and **80** connected in the electrical bridge circuit **90** such that strain gauges **75** and **76** are mounted at diametrically opposite locations on reduced section **52** below and above, respectively, the center line, and their strain sensing elements oriented lengthwise of the rocker pin, and strain gauges **79** and **80** are mounted in the same diametrically opposite locations as compression gauges **75** and **76**, but on opposite sides

of the center line from the compression gauges; (2) preamplifier **92**, analog filter **94**, analog switch **96**, multiple slope integrating analog-to-digital (A/D) converter **100**, nickel resistor connected to bridge circuit **90**, a power supply **103**; (3) a microprocessor, which contains memory (including ROM, EEPROM, and RAM), a serial interface unit **105b**, a driver **107**, a receiver **108**, and (4) a multi-wire bus." ` 547 patent, col. 4, ll. 1-15, col. 13, ll. 22-29 and col. 4, l. 62 - col. 5, l. 23. B-Tek proposes ` 547 patent, col. 13, ll. 22-29 as an alternative structure: "(b), (c) and (d) from above, plus: four strain gages **687-690** spaced at 90 degree intervals on the upper surface of torsion ring **684** directly below the compression gages to sense tensile strains in the torsion ring. The strain gauges are connected in an electrical bridge circuit."

B-Tek's proposed structure includes strain gauges. B-Tek argues that inclusion of the strain gauges is necessary because the strain gauges are "associated with said counterforce" and initially sense the compressive and tensile forces and move that analog signal to other circuitry. This Court agrees that the strain gauges are "associated" with the counterforce. However, as noted above, the function does not require structure for compressing and sensing tensile strains. Further, many of the structural items suggested by B-Tek do not actually perform the recited function.

Clearly, a "circuit means" could be anything that electrically connects the counterforce to the external control device, such as a multi-wire bus, etc. However, items that are corresponding structure and are to be included must perform the recited function and be clearly linked to it. The "circuit means" must be able to respond to external control and also produce digital representations of loads applied to the counterforce.

In one aspect of the invention, a load cell is described as having a digital circuit board attached to the counterforce. Means such as a connector provide a signal path through the enclosure to the circuit board for external communication. The digital circuit board includes circuits for

producing digital weight readings and transmitting them to the master controller. '547 patent, col. 2, ll. 7-18.

In describing the best mode for carrying out the invention, the '547 patent states that he printed circuit board contains the electronic circuits associated with the load cell including an analog-to-digital converter and a microprocessor. The printed circuit board is "more fully described" later in the specifications. '547 patent, col. 3, ll. 9-12. The combination of counterforce, circuit board and enclosure produces the digital load cell generally designated **20**. '547 patent, col. 3, ll. 15-17.

Figure 5 refers to the detailed electrical circuitry which is contained within the circuit board. See '547 patent, col. 4, l. 63 - col 5, l. 23. "The output of the analog switch **96** is connected to the input of a multiple slope integrating analog to digital converter **100**." '547 patent, col. 4, l. 68 - col. 5, l. 2. "Microprocessor **105** controls the operation of the analog switch **96** to cause analog weight signals from bridge **90** and temperature signals from nickel resistor **82** to be converted to digital form by A/D converter **100** and transmitted to microprocessor **105**." '547 patent, col. 5, ll. 10-15.

Microprocessor **105** communicates with the master controller or other external computer device. '547 patent, col. 5, ll. 19-24. The specifications disclose that it is the master controller (the external control) which polls the load cells (which contained the circuit board with the microprocessor and analog to digital converter) to receive weight data. '547 patent, col. 6, ll. 1-4. The digital load cells are programmed to operate as slaves to a master controller or host computer and respond to commands directed to it. '547 patent, col. 6. ll. 16-19.

The corresponding structure which will perform the function of responding to external control as well as producing digital representations of loads is "a digital circuit board **14** containing both microprocessor **105** and a multiple slope integrating analog- to-digital converter **100**, and

equivalents thereof".

3. "<u>means for producing digital representations of loads applied to said counterforce</u>" (claims 1 and 9)

The parties agree, and the court finds, that this is a means-plus-function term. Mettler-Toledo argues that the recited function is "to transform the analog output signals of a load cell into digital signals representative of loads experienced by its counterforce." B-Tek initially contended the function is "each load cell's analog output is transformed into a digital signal corresponding to the load experienced by the counterforce." At the hearing, B-Tek agreed with Mettler-Toledo. The Court will adopt the function provided by Mettler-Toledo. At the outset, this Court notes that this claim term was construed above because the "circuit means" included means for producing digital representations.

Mettler-Toledo argues that the corresponding structure is "an analog-to-digital (A/D) converter." B-Tek again proposes "preamplifier **92**, analog filter **94**, analog switch **96**, multiple slope integrating analog-to-digital (A/D) converter **100**, nickel resistor connected to bridge circuit **90**, a power supply **103**, and a microprocessor."

The analog-to-digital converter is consistently described as an apparatus that converts the analog output into a digital signal. The specification discloses that the printed circuit board contains the electronic circuits associated with the load cell including an analog-to-digital converter and a microprocessor "and is described more fully" later in the specifications. '547 patent, col. 3, ll. 9-12. Later in the specifications, the general analog-to-digital converter is disclosed as a multiple slope integrating analog-to-digital converter **100**. Again, "microprocessor **105** controls the operation of analog switch **96** to cause analog weight signals from bridge **90** and temperature indicating signals from nickel resistor **82** to be converted to digital form by A/D convertor **100** and transmitted to

microprocessor **105.**" ` 547 patent, col. 5, ll. 8-15; *see also* Fig. 5. The multiple slope integrating analog-to-digital (A/D) converter forms the function of providing digital readings indicative of loads experienced by the counterforce.

B-Tek seeks to include structures that perform functions outside of what the parties agreed to. For example, the microprocessor controls, among other things, the operation of the analog switch, but there is no indication that the microprocessor converts the analog output of each load cell into a digital signal. Based on the agreed function, the corresponding structure is: "a multiple slope integrating analog-to-digital (A/D) convertor, and equivalents thereof."

4. "<u>means for applying at least one correction factor to said digital representations</u>" (claims 1 and 11)

The parties agree, and the Court determines, that this limitation falls within § 112, ¶ 6. Mettler-Toledo argues that the recited function is "to apply one or more correction factors to the digital readings indicative of loads experienced by the counterforce." B-Tek argues the function is "the computation and/or application of at least one correction factor to a weight reading every time a load is applied to a scale." The difference in the function, as proposed by both parties, relates to whether the structure corresponding to this function is required to apply the correction factor(s) "every time a load is applied to a scale."

B-Tek's proposed function requires the Court to narrow the claim outside of the claim language. The Court concludes that the function associated with this means plus function term is "to apply one or more correction factors to the digital readings indicative of loads experienced by the counterforce." B-Tek submits that this claim is indefinite in that none of the physical structures shown in Figs. 1-4 are described as performing the claimed function nor are they capable of performing the claimed function.

As noted above, since this function is computer implemented, the patent must disclose an algorithm to be performed by the computer to accomplish the recited function. *WMS Gaming Inc.*, 184 F.3d at 1349. This does not mean that the patentee must disclose specific source code for the computer. And, the term "algorithm" is not limited to a formula of mathematical symbols.

In the Summary of the Invention, the patentee notes that the circuit board includes means for applying stored digital correction factors to the weight readings. '547 patent, col. 2, ll. 14-18. The printed circuit board contains a microprocessor and an A/D converter. '547 patent, col. 3, ll. 9-12. Microprocessor **105** is provided with memory **105a** including ROM, EEPROM and RAM for storage of programs and of data received from the A/C converter **100** and from a remote controller or computer. '547 patent, col. 5, ll. 16-19.

The '547 patent teaches that the digital load cell is programmed to compensate its weight readings for temperature effects on zero and span, for span trim and for linearity and creep. The compensation algorithms employed including the values of the constants are stored in the load cell's memory. '547 patent, col. 6, ll. 27-31. The patent specifically disclosed the algorithm (equation (1)) for use in correcting linearity. '547 patent, col. 6, ll. 41-63. The '547 patent then sets forth several flowcharts which illustrate the operation of the load cell. See '547 patent, Figures 9A-9M. In particular, Figure 9B illustrates the application of the correction factors. "If a weight reading is to be compensated, a subroutine 'PROCWT' is performed at block **275** to temperature compensate the zero and span coefficients." '547 patent, col. 7, ll. 25-27. "At block **276** subroutine 'LINCOR' is utilized to correct the weight reading for nonlinearity." '547 patent, col. 7, ll. 27-29. The patentee went further and included two flowcharts to illustrate the steps in subroutine "LINCOR". '547 patent, Figures 10A and 10B. "Subroutines are performed at blocks **277** and **278**, respectively, to

modify the weight reading according to a span trim coefficient (subroutine 'SPANTRIM') and to correct the weight reading for creep (subroutine 'CRPADJ') in the load cell." '547 patent, col. 7, ll. 30-34.

The patent identifies a specific algorithm for correcting linearity and subroutines for performing this correction as well as other corrections to the digital weight readings. The Court concludes that the term is not indefinite. The corresponding structure is: "microprocessor **105**, programmed to perform at least one of the following correction factors: (1) the subroutine "PROCWT" (to compensate for zero and span coefficients); (2) equation (1) and the subroutine "LINCOR" (to correct the weight reading for nonlinearity); (3) the subroutine "SPANTRIM" (to modify the weight reading according to a span trim coefficient); or (4) the subroutine "CRPAD"(to correct the weight reading for creep), and equivalents thereof."

5. "<u>means for transmitting said digital representations</u>" (claims 1 and 9)

The parties agree, and the court determines, that this limitation falls within § 112, ¶ 6. In Claim 1, the exact phrase is "**means for transmitting said digital representations**." ` 547 patent, Col. 13, l. 64. In Claim 9, the exact phrase is "**means responsive to external interrogations for transmitting said digital representations**." ` 547 patent, Col. 14, ll. 51-52.

Mettler-Toledo argues that in Claim 1, the recited function is "transmission of digital readings from the analog-to-digital converter to the microprocessor of a load cell, the readings being indicative of loads experienced by the counterforce" whereas in Claim 9, the function is "transmission of digital readings indicative of loads experienced by the load cells to an external device." According to Mettler-Toledo, "transmitting" as used in claim 1 refers to transmissions internal to the load cell, while "transmitting" as used in Claim 9 refers to transmissions from the load cell to an external device.

B-Tek argues that the function is "to transmit the digital representations to a remote master controller or computer" in both claims.

The patentee in this case had unbridled discretion in his choice of words, and he chose to include the "external" limitation in Claim 9 and not utilize it in Claim 1. Further, it appears that Claim 1 relates to a single load cell while Claim 9 relates to a plurality of load cells connected together in a LAN. B-Tek's argument that the two different terms have the same meaning in two different claims is unavailing.

Accordingly, the Court finds that the function in Claim 1 is "to transmit digital representations of loads applied to the counterforce". Mettler-Toledo argues the corresponding structure for the term in Claim 1 is "an analog-to-digital converter and related circuitry". The patent teaches that, within the load cell, microprocessor **105** causes the analog switch **96** to cause analog weight signals from bridge **90** and temperature indicating signals from nickel resistor **82** to be converted to digital form by A/D converter **100** *and transmitted to* microprocessor **105**. '547 patent, col. 5, ll. 10-15 (emphasis added), *see also* Fig. 5. Again, the analog to digital converter is specifically disclosed as a multiple slope integrating analog to digital converter **100**. For the reasons previously discussed, this Court determines the corresponding structure to be "multiple slope integrating analog-to-digital converter **100**, and equivalents thereof".

The function in Claim 9 is "to transmit the digital representations of loads applied to the counterforce in response to external interrogations". Again, microprocessor **105** communicates with the master controller or other external computer device. '547 patent, col. 5, ll. 19-24. The specifications disclose that it is the master controller (the external control) which polls the load cells to receive weight data. '547 patent, col. 6, ll. 1-4. The digital load cells are programmed to operate

as slaves to a master controller or host computer and respond to commands directed to it. '547 patent, col. 6. ll. 16-19.

The corresponding structure which will perform the function of transmitting the digital representations of loads applied to the counterforce in response to external interrogations is "digital circuit board **14** containing a microprocessor **105**, and equivalents thereof".

6. "means providing a sealed enclosure for said transducer means and said circuit means" (claims 1 and 9)

The parties agree, and the court finds, that the function is "to enclose in a protective seal the transducer means (defined above) and circuit means (defined above)."

Mettler-Toledo initially argued that the corresponding structure is "a secure housing". B-Tek argues that the corresponding structure is "enclosure **15**." Metter-Toledo eventually agreed that the corresponding structure is "enclosure **15**" but asserts that such an enclosure is not limited to the specific preferred embodiment of enclosure **15**. At the hearing, B-Tek agreed that the number **15** does not have to be used in the definition.

The '547 patent notes that in one aspect of the invention, a load cell having a digital circuit board fastened to the counterforce is provided with a "sealed enclosure" for the circuit board and the transducer bearing portion of the counterforce. '547 patent, col. 2, ll. 7-11. In referring to the best mode, the specifications denote the enclosure as "enclosure **15**". This is the only enclosure disclosed. The court concludes that the corresponding structure is "enclosure **15**, and equivalents thereof."

7. "<u>means providing a path through said enclosure means for external communication with said circuit means</u>" (claims 1 and 9)

Mettler-Toledo argues the recited function "is to provide a passageway through the secure

housing that allows for access to and communication with the circuit board or similar electronic circuitry." B-Tek argues that the function is "to provide a path through the enclosure means (defined above) to enable communication between a remote master controller external to the load cell with the circuit means (defined above)." Mettler-Toledo's construction suggests that there must be "access" to the circuit means. The claim limitation does not indicate any, requirement to have "access" to the circuit means. In fact, the specification expressly states that "the load cell requires no physical adjustment within the enclosure after manufacture and can be controlled and corrected using the signal path through the enclosure." '547 patent, col. 2, ll. 18-24. The Court concludes that the function is "to provide a path through the enclosure means for external communication with the circuit means."

Mettler-Toledo argues the corresponding structure includes "an opening in the wall of the secure housing." Mettler-Toledo points to '547 patent, col. 2, ll. 9-13 in support of its argument that an "opening" is the only structure necessary to enable communications. The '547 patent, col. 2, ll. 9-13 states only that a circuit board transmits digital weight readings "over the path through the enclosure" and makes no mention of any "opening." While an opening could be *part* of a path, an opening is only part of the structure required to enable communications.

B-Tek argues the corresponding structure is disclosed in the ` 547 patent, col. 3, ll. 30 - 34, "an electrical connector **33** extend through opening **30** and is welded to the wall portion of member **21** that defines opening **30**. Electrical wiring **34** from connector **33** extends within enclosure **15** to a connector on circuit board **14**.

Again, the load cell having a digital circuit board fastened to the counterforce is provided with a sealed enclosure for the circuit board and the transducer bearing portion of the counterforce. Means such as a connector provides a signal path through the enclosure to the circuit board for

external communication. '547 patent, col. 2, ll. 11-14. The question is what provides the path through the enclosure so that external communication can take place. The only disclosed structure that provides a path through the enclosure is "an electrical connector **33** through opening **30**". *See* '547 patent, col. 3, ll. 30-34; Figures 1 and 2. Electrical wiring **34** and the connector on circuit board **14** provide the requisite electrical connection but do not provide a path through the enclosure. Therefore, the corresponding structure is "electrical connector **33**, through opening **30**, and equivalent structures".

8. "load receiving means supported by said load cells" (claim 9)

The parties agree that this phrase is a means-plus-function term. The parties also agree, and the Court finds, that the function is "to provide a structure for receiving a load to be weighed." The dispute is over the corresponding structure and the parties assert the same arguments which were asserted regarding the same limitation in claim 1 of the '052 patent.

In the specifications, the '547 patent references the single truck scale embodiment. The patent discloses that the "system includes eight digital load cells **20** as described above supporting a platform **125** suitable for holding a vehicle such as a truck." ` 547 patent, col. 5, ll. 25-29; *see also* Figs. 6 and 7.

Therefore, the court concludes that the corresponding structure is "platform **125**, and equivalents thereof."

9. "means connecting said load cells in local area network" (claim 9)

This is a means-plus-function term governed by 35 U.S.C. § 112 ¶ 6. The Court notes that claim 6 of the '052 patent contained the limitation "means connecting said load cells *and said control means* in a local area network". '052 patent, col. 17, ll. 2-3. This limitation only requires

that the load cells be connected in a local area network.

The parties had agreed that the function is: "to connect or link the load cells and the control means in a local area network." and repeated the arguments previously made concerning the corresponding structure. The parties have also agreed that "local area network" means "a geographically limited system comprised of various electronic components that are connected or linked together so that they can communicate and/or operate with one another."

However, the Court notes that this is a different limitation from the one set forth in claim 6 of the '052 patent and declines to adopt the agreed function. To adopt the agreed function would narrow the function beyond that specified by the claim. Therefore, the Court finds that the function is "to connect or link the load cells in a local area network."

The '547 patent refers to Figures 6 and 7. In those figures, the load cells **20** are connected through a junction box **127** and through a bus **128** to a master controller **130**. The Court concludes that the corresponding structure is "junction box **127**, bus **128,** master controller **130**, and equivalents thereof."

10. "<u>means for interrogating said load cells to receive said digital representations</u>" (claim 9)

The parties agree, and the court finds, that this is a means-plus-function term governed by 35 U.S.C. § 112 ¶ 6. This term is similar to the limitation set forth in claim 5 of the '052 patent which was "*control* means for interrogating said load cells to receive said digital representations." See '052 patent, col. 16, ll. 66-68. The parties adopted the same arguments and this Court adopts its analysis set forth therein. Mettler-Toledo again states that the function is "to gain digital readings indicative of weight on each load cell." B-Tek again suggests "to interrogate the memory devices associated with the individual load cells, receive the load cells' respective digital representations of the analog electrical outputs from those memory devices, and store in memory those digital outputs."

As stated earlier, "interrogation" means "the signal or combination of signals intended to trigger a response." *See* IEEE STANDARD DICTIONARY OF ELECTRICAL AND ELECTRONICS TERMS (6th ed. 1996).

It is clear that the claimed function is to interrogate the load cells to prompt the load cells to so that the claim structure can receive "said digital representations". "Said digital representation" is the "digital representation of loads applied to said counterforce". '543 patent, col. 14, ll. 47-51. Based on the claim language, the court concludes that the function is: "to send a signal, or combination of signals, to the load cells intending to receive a digital representation of the load applied to said counterforce."

Mettler-Toledo again proposes that the corresponding structure is "an indicator, terminal or master controller." B-Tek contends that it is a "microprocessor **140** with internal RAM memory **140a**, serial interface **140b**, driver **142**, receiver **143** and multi-wire bus **128**."

Again, the question is what structure disclosed in the specifications interrogates or sends a signal to the load cells in order to receive the digital representations. The '547 patent discloses that it is the master controller, acting as a LAN master, which polls the load cells, LAN satellites or slaves, at a desired rate to receive weight data from each load cell. '547 patent, col. 6, ll. 1-4. The items proposed by B-Tek as corresponding structure are not specifically linked to the performance of the function. Therefore, the Court concludes that the corresponding structure is: "a master controller, and equivalents thereof."

11. "<u>means for combining said digital representations to produce digital representations of the total weight on said load receiving means</u>" (claim 9)

The parties agree, and the court finds, that this is a means-plus-function term subject to 35

U.S.C. § 112 ¶ 6. Mettler-Toledo proposes that the function is "to combine the digital readings from each load cell to produce a digital weight reading indicative of the total weight on the platform." B-Tek argues that the function is "to add the digital representations from all load cells for purposes of determining the total weight on the one or more scales or platforms."

The functions suggested by the parties are virtually identical. The Court finds that the function is: "to combine the digital weight readings from all load cells to produce a digital weight reading indicative of the total weight on the platform."

B-Tek argues that there is no corresponding structure which is clearly linked to this function. Mettler-Toledo argues that the corresponding structure is a "microprocessor." B-Tek argues the microprocessor is not disclosed in the specifications as being corresponding structure. B-Tek asserts that there is no corresponding structure linked to the performance of the function and therefore the claim is indefinite. In addition, B-Tek also argues that this limitation requires the use of software, but the microprocessor disclosed in the patent is not described as utilizing any software.

Here, the microprocessor is described as part of the master controller. *See* ` 547 patent, col. 5, ll. 38-40. The specification teaches that "[t]he essential feature is that the master controller receive and operate on digital information from each of the multiple load cells." ` 547 patent, col. 6, ll. 13-15. The specification states: "The flow chart of Figs. 11A to 11L illustrates the operation of the master controller **130** in the scale of FIGS. 6 and 7." ` 547 patent, col. 9, ll. 13-15. "Operation proceeds through a loop until all the load cells in the system have responded positively as determined at block **435**." '547 patent, col. 9, ll. 54-56. "A adjust key command at block **457** initiates through point **463** a procedure for determining the values of load correction constants." '547 patent, col. 10, ll. 16-19.

If several criteria are met, operation is begun at block **500** to adjust the weight readings for load position and to sum the readings to obtain the total weight on the scale. '547 patent, col. 10, l. 66 - col. 11, l. 2. The specifications then set forth in detail how weight readings from the load cells are summed up in the total weight register. '547 patent, col. 11, ll. 2-22. The operation proceeds until the weight readings from all of the load cells have been multiplied by the respective load position correction constants and summed in the total weight register. '547 patent, col. 11, ll. 22-26.

The Court concludes that the term is not indefinite. The Court notes that the '547 patent discloses that the master controller performs the specified function. The '547 specifications and Figure 11K disclose the specific steps to be taken by the master controller to successfully add the weight readings from the individual load cells to obtain the total weight. Figure 11K discloses this information in the form of a flowchart.

Therefore, the corresponding structure is: "master controller **130**, and equivalents thereof."

VI. Claim Construction of ` 441 Patent

The `441 patent involves a mounting technique for load cells that is employed to restrain rotation of a load cell about its longitudinal axis when moved by transverse force vectors produced during its use in a weighing system. The load cells use a columnar structure formed with at least one self-erecting rocker pin to avoid being displaced from a vertical orientation, as often occurs upon vehicular movements on a scale.

All of the disputed terms are contained in Claims 11, 12 and 13. Claim 11 with the disputed terms in bold, states:

> A method of constructing a self-stabilizing vehicle scale on a base comprising the steps of **positioning at least one self-erecting rocker pin load cell in an upright position on said**

base, said load cell having a longitudinal axis and a **lower surface in contact with said base and an upper contact surface** and being subject to both vertical and temporary transverse force vectors creating transient rotational force vectors urging said rocker pin to rotate about said longitudinal axis; **supporting a load platform on the upper contact surface of the load cell**; and restricting rotation of said load cell about said longitudinal axis.

Claim 12 with the disputed terms in bold and agreed terms in italics, states:

A method as claimed in claim 11 wherein the step of restricting rotation of the load cell includes the steps of **providing a stable reference isolated from the load cell** and **coupling rotation inhibiting means between the stable reference and the load cell**.

Claim 13 with the disputed terms in bold and agreed terms in italics, states:

In a weighing system wherein a load to be weighed exhibiting both vertical and temporary transverse force vectors is positioned upon a load platform load receiving surface having freedom of movement, said load platform being supported upon load cells each with a given external surface and formed having a self erecting rocker pin configured as a counterforce, each rocker pin having an axis along is lengthwise extent and **oppositely disposed upper and lower contact surfaces of predetermined radii**, the said lower contact **surface being mounted in freely pivotal abutting contact at the upwardly disposed surface of a lower receiver supported from a ground base support** and the said **upper contact surface being mounted for freely pivotal abutting contact with the downwardly disposed surface of an upper receiver supported by a said load platform support to compressively receive said vertical force vectors**, **the point of said freely abutting contact being variable with respect to movement of said platform occasioned by said transverse force vectors** and creating transient rotational force vectors urging said rocker pins to rotate about said axis, the improved rocker pin counterforce configured load cell mounting comprising:

restrainer means for providing a stable reference isolated from said rocker pin; and
rotation limit means coupled with said restrainer means, contactable with said load cell for restricting said rotation thereof within predetermined limits by counteracting only said rotational force vectors while not affecting said vertical force vector induced compression reception, and not affecting said freely pivotal mounting.

1. "positioning at least one self-erecting rocker pin load cell in an upright position on said base" (claim 11)

Mettler-Toledo contends that this means "placing at least one self-erecting rocker pin load

cell on the ground or on a bottom support such that the long axis of the load cell is substantially perpendicular thereto." B-Tek proposes "to put at least one self-erecting rocker pin load cell on the ground or bottom support so that the long axis of the load cell is oriented perpendicular to the base.**"**

The issue is whether "upright" means that the load cell must be "oriented perpendicular" or just "substantially perpendicular" to the base. To support their respective positions, both parties point the Court to the summary of the ` 441 patent, col. 2, ll. 62-65, which states that the "self-erecting rocker pin load cell" is "in an upright position on the base, the load cell having a longitudinal axis and the lower surface in contact with the base, and an upper contact surface." This does nothing to indicate whether the rocker pin must be at an exact 90 degree angle to the base or whether some leeway is allowed.

The specification repeatedly states that the rocker pin must begin in an "essentially vertical" position. The "central axis of the rocker pin **40** is essentially vertical and compressively supports the load represented by the platform **16** . . ." ` 441 patent, col. 6, ll. 24-26. Transversely oriented bumper structures are provided so that the rocker pin would retain "essentially a vertical orientation." ` 441 patent, col. 6, ll. 31-32. As used in the field, "upright" means "a vertical structural member, post or stake." *See* McGraw-Hill Dictionary of Scientific and Technical Terms (6th ed. 2003). The parties agree to use the term "perpendicular" as part of the definition and the court finds that this comports with the ordinary usage of this term. *See* Oxford English Dictionary online *available at* http://dictionary.oed.com (defining "upright" as "in or into a vertical position; perpendicular to the ground or other surface.")

The Court concludes that the claim means "to put at least one self-erecting rocker pin load cell on the ground or bottom support so that the central axis of the load cell is essentially perpendicular to the base."

2. "providing a stable reference isolated from the load cell" (claim 12)

At the hearing, the parties agreed, and the Court concludes, that the construction is "providing a stable reference isolated from a load cell, such as a fixed structure not attached to the load cell."

3. "coupling rotation inhibiting means between the stable reference and the load cell" (claim 12)

The parties agree, and the Court finds, that this is a means-plus-function term subject to 35 U.S.C. § 112 ¶ 6. Mettler-Toledo contends that the recited function is "restricting rotation of the load cell about its long axis." B-Tek claims that the function is "restricting rotation of the load cell about its long axis within specified limits by counteracting only the rotational force vectors and not affecting the downward force vectors, and not affecting the ability of the load cell to freely pivot."

B-Tek believes that Mettler-Toledo's proposal is an insufficient disclosure of function because it fails to state *how* to restrict rotation. B-Tek points to ` 441 patent, col. 3, ll. 25-36 in support of its argument, which describes the "rotation limit means" used in claim 13. If the patentee meant to include such a narrow function, the patentee would have included such a limitation in the claim language, as it did in the "rotation limit means" in claim 13, discussed below. Again, when determining the function, this court may not improperly narrow or limit the function beyond the scope of the claim language. *Micro Chem. Inc.,* 194 F.3d 1250 at 1258.

The Court concludes that the function is "to restrict rotation of the load cell about its long axis." The parties agree, and therefore, this Court finds, that the corresponding structures are "a receiver **52** inserted into a baseplate **54** and having a receiving cavity **100** for receiving an end of a load cell and a slot **114**; spring members **188** and **190** associated with the load cell enclosure; one or a pair of helical springs **210** and **212**; and/or a rod-like engaging component **236** that protrudes

substantially perpendicularly from the enclosure **232** of the load cell, and equivalents thereof."

4. "oppositely disposed upper and lower contact surfaces of predetermined radii" (claim 13)

Mettler-Toledo contends that no construction is necessary for this term. B-Tek claims that this term means "each end surface of a load cell has a fixed radius."

B-Tek's proposed definition may lead readers to think that the radii are "fixed" in such a way that the rocker pin cannot move. However, the specification clearly states that the rocker pin is "freely pivotal" and only restricted in movement by the rotational limit arrangement. ` 441 patent, Col. 8, ll. 34-35. The ordinary and plain language of the term sufficiently indicates that the upper and lower contact surfaces have predetermined radii. The Court concludes that the no construction is necessary.

5. "lower contact surface being mounted in freely pivotal abutting contact at the upwardly disposed surface of a lower receiver supported from a ground base support" (claim 13)

Mettler-Toledo initially proposed "the load cell can tilt within a lower receiver after installation of an end of the load cell thereto." B-Tek originally suggested "the lower contact surface of the load cell is placed within the receiver cavity such that it can freely pivot in any direction. The receiver is supported by a ground support in a fixed position." At the hearing, the parties agreed, and the Court concludes, that this term should be construed as "the lower contact surface of the load cell is placed within the receiver cavity such that it can freely pivot. The receiver is supported by a ground support in a fixed position."

6. "upper contact surface being mounted for freely pivotal abutting contact with the downwardly disposed surface of an upper receiver supported by a said load platform support to compressively receive said vertical force vectors" (claim 13)

Mettler-Toledo contends that the construction should be: "the load cell can tilt within an upper receiver after installation of an end of the load cell thereto." However, the Court agrees with

B-Tek that this construction omits a portion of the limitation.

In its brief, B-Tek argued that the term means "the upper contact surface of the load cell is placed in contact with an upper receiver such that it can pivot in any direction. At the hearing B-Tek proposed "the load cell can tilt within an upper receiver after installation of an end of the load cell thereto. The load platform support holds the upper receiver in a fixed location and receives downward forces". Mettler-Toledo argues, and this Court agrees, that the claim limitation does not require that the upper receiver be held in a "fixed location". The Court construes this term within its plain meaning to mean the following: "The upper contact surface of the load cell is mounted so that it freely pivots in contact with the downward surface of the upper receiver. The upper receiver is supported by a load platform to receive vertical force vectors."

7. "the point of said freely abutting contact being variable with respect to movement of said platform occasioned by said transverse force vectors" (claim 13)

As a proposed construction, Mettler-Toledo suggested "the point(s) of contact between an end of the load cell and its respective receiver will vary depending on the transverse movement of a related load platform." B-Tek agreed to this construction, and this Court adopts it.

8. "rotation limit means coupled with said restrainer means, contactable with said load cell for restricting said rotation thereof within predetermined limits by counteracting only said rotational force vectors while not affecting said vertical force vector induced compression reception, and not affecting said freely pivotal mounting" (claim 13)

Mettler-Toledo originally stated that the recited function is "restricting rotation of the load cell about its long axis within predetermined limits." Before the hearing, B-Tek contended that the recited function is "restricting the rotation of the load cell about its long axis within specified limits by counteracting only the rotational force vectors and not affecting the downward force vectors, and not affecting the ability of the load cell to freely pivot in any direction." At the hearing, the parties agreed, and the Court finds, that the function is "restricting the rotation of the load cell about its long

axis within specified limits by counteracting only the rotational force vectors, and not affecting the downward force vectors, and not affecting the ability of the load cell to freely pivot."

The parties agree, and the Court finds, that the corresponding structures are "a receiver **52** inserted into a baseplate **54** and having a receiving cavity **100** for receiving an end of a load cell and a slot **114**; spring members **114** and **190** associated with the load cell enclosure; one or a pair of helical springs **210** and **212**; and/or a rod-like engaging component **236** that protrudes substantially perpendicularly from the enclosure **232** of the load cell."

VI. CONCLUSION

The jury shall be instructed in accordance with the Court's interpretations of the disputed claim terms in the ` 052, ` 547, and the ` 441 patents.

SIGNED this the 7th day of March, 2008.

KEITH F. GIBLIN
UNITED STATES MAGISTRATE JUDGE